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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,536	08/31/2001	Lee C. Moore	D/A0A45	3291

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EXAMINER
KOYAMA, KUMIKO C

ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 05/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

A

	Application No.	Applicant(s)
Office Action Summary	09/944,536	MOORE, LEE C.
	Examiner	Art Unit	
	Kumiko C. Koyama	2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2005*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18 and 20-30* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18 and 20-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 042905

DETAILED ACTION

Acknowledgement is made of receipt of Amendment filed on February 03, 2005.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1, 2, 4, 5, 7-13, 18, 20 and 22-30 are rejected under 35 U.S.C. 103(a) as
being unpatentable over Okamoto et al (US 4,813,010) in view of Palmer et al (US
6,002,798).

Okamoto discloses that a general document is divided into a plurality of blocks,
and headings are assigned to the respective blocks. Each block is further divided into
subblocks and subheadings are assigned to the respective subblocks (col 1, lines 12-20).
Okamoto teaches a document processing using heading rules storage for generating
documents with hierarchical logical architectures that when a document data is input at
input device, the input document data is sequentially stored in a document storage. The
input document data is segmented into a plurality of blocks by document processor. In
segmentation processing, a line return code and a space code or segmentation symbol
such as "...", ";", ",", or ":" are determined as segmentation codes. In this case, the
segmentation sentence length is measured by counting characters. (col 5, lines 14-29).
Such disclosure teaches the delimiter definition limitation of the claim. Okamoto further

discloses that if the measure value falls within a predetermined value the sentence is determined as having the possibility of being a heading sentence, which is interpreted as searching the document to find the occurrences of items corresponding to the defined sub-section delimiter. When the segmented sentence is determined as having the possible of being a heading sentences according to the measure number of characters, or delimiter, the processor further determines whether the segmented sentence is a heading candidate, and then a heading word (col 5, lines 30-40, col 6, lines 27-45). After the segmented sentence is determined as a heading word, the heading goes through a decision to be assigned with a logical hierarchy, such as C1 in this case (col 6, lines 47-60). The logical architecture containing the chapter heading is stored in logical architecture storage (col 6, lines 55-60). Okamoto also discloses that it is know in the art that document data is processed in units of pages of the printing sheets (col 1, lines 24-25).

Okamoto does not specifically disclose generating an index for the document. Okamoto as modified by Kuga fails to teach scanning a printed version of the document to generate scan data, performing one of optical character recognition functions and document recognition functions on the scan data to generate an electronic version of the document. Okamoto also fails to teach selecting an exemplary sub-section title, performing one of document recognition and optical character recognition on the selected exemplary sub-section title, and using at least one recognized property of the exemplary sub-section title as a subsection delimiter definition.

Palmer teaches a method and apparatus for creating and indexing documents. An original document is inputted by a scanner that operates to scan the original documents printed on a sheet of paper, and to convert the information of those original documents

into a bit-by-bit computer readable representation of that document (col 4,m lines 60+) and stores it into RAM (col 6, lines 1-2). The structure of the document is determined by conventional block selection techniques which utilize a rule-based knowledge system for identifying specific areas in a document and for determining the content of the image within those areas such that the document image is decomposed into a general set of objects (col 2, lines 45-51 and col 5, lines 55+). The CPU identifies the type of region, for example, whether a region is a title region, a text region, a paragraph region, a table region, etc (col 6, lines 2-6). Palmer also discloses that the CPU 11 subjects designated document regions to OCR processing in preparation for creating a retrieval index for the document. Furthermore, Palmer discloses that the CPU 11 offers the operator the option of selecting the index level, wherein the operator selects a level, such as level 1, and then the CPU 11 subjects only title regions to OCR processing. The resulting text from the title regions is provided for a retrieval index to allow the document to be retrieved when words in the title match a specified search query (col 6, lines 55+). Palmer also teaches displaying the document (col 2, lines 28-31).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to integrate the teachings of Palmer to the teachings of Okamoto in order to in order to quickly locate the index occurrence position of a major sub-section of the document and customized indexing particular for a particular user or field for faster and specialized use.

3.   Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto in view of Palmer as applied to claim 1 and 9 above, and further in view of

Knowles (US 6,345,764). The teachings of Okamoto as modified by Palmer have been

discussed above.

Okamoto as modified by Palmer fail to teach that the delimiter searcher is

operative to search for a defined delimiter comprising a symbol selected from a barcode

and a data glyph.

Knowles teaches a document containing barcodes (Fig. 1A).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time

the invention was made to integrate the teachings of Knowles to the teachings of

Okamoto as modified by Palmer because a reader may be trying to retrieve or searching

for a collection of barcode or information contained in a barcode, which simplifies the

users search because barcodes can be scanned instantaneously and directly leads to the

precise information source.

4.   Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto

in view of Palmer as applied to claim 1 above, and further in view of Kuga et al (US

5,276,616). The teachings of Okamoto as modified by Palmer have been discussed above.

Okamoto as modified by Palmer fail to teach displaying the created index,

checking the displayed index is correct and correcting the index.

Kuga further discloses an index generating unit 6 including an index entry list

generator 22 connected to text storage 20 for extracting index entries from the textual

data, an index entry storage 24 connected to index entry list generator 22 for storing the

index entries outputted from the generator 22, and an index editor 26 for editing the index

entries stored in index entry storage 24 based on the instructions from the input unit 2,

which includes a keyboard (col 7, line 24) and for applying the edited index entries to

printer 10. Such disclosure teaches checking and correcting the index. Index editor 26 is

for alphabetically rearranging the index entries and classifying the same into different

initial letters to enable printing of the index (col 7, lines 40-52). Kuga also discloses a

text input unit, which is a flexible disk driver for applying text data stored in an external

medium to text editor 18, and the output of the text editor is connected to display (col 7,

lines 34-36). Such disclosure teaches that the text is in an electronic form. Kuga further

discloses that the input unit 2 is to enable input by an operator by generating signals such

as character data or operation codes in response to a manual operation, a text editing unit

4 connected to the input unit 2, a display unit 8 for displaying the edited text or the like,

an index generating unit 6 connected to input unit 2 and text editing unit 4 for

automatically generating an index from the text edited by text editing unit 4 and index

generating unit for printing the edited text or the index on paper 28 (col 7, lines 10-23).

Kuga teaches a keyword database for storing extracted set of keywords that are updated

and added by the operator through the keyboard (col 3, lines 35-45).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at

the time the invention was made to integrate the teachings of Kuga to the teachings of

Okamoto as modified by Palmer in order to ensure the accuracy of the index such that

erroneous results are not produced as a result from misinterpreted or misread document

indexes.

5.   Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Okamoto in view of Palmer as applied to claim 9 above, and further in view of Schmidt

et al (US 4,903,229). The teachings of Okamoto as modified by Palmer have been

discussed above.

Okamoto as modified by Palmer fail to teach that the print engine comprises a

xerographic printer.

Schmidt teaches a forms generating and information retrieval system utilizing a

xerographic print engine 24 (col 2 line 34).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at

the time the invention was made to modify the teachings of Schmidt to the teachings of

Okamoto as modified by Palmer because the xerographic print engine generates forms

and inures the benefits of graphic reproduction.

6.   Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto

in view of Palmer and Schmidt as applied to claim 15 above, and further in view of

Herregods et al (US 6,064,397). The teachings of Okamoto as modified by Palmer and

Schmidt have been discussed above.

Okamoto as modified by Palmer and Schmidt fail to teach that the print engine

comprises an inkjet printer.

Herregods teaches that a printer can be a inkjet printer (col 1 line 42).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at

the time the invention was made to modify the teachings of Herregods to the teachings of

Okamoto as modified by Palmer and Schmidt because an inkjet printer can provide a

reproduction of colored document, therefore it can provide a more precise reproduction

of the document when the document includes colored features.

7.   Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto

in view of Palmer as applied to claim 1, and further in view of Alam et al (US 6,336,124).

The teachings of Okamoto as modified by Palmer have been discussed above.

Okamoto as modified by Palmer fails to teach that the automatically generated index is an automatic generated table of contents of the document, and the items corresponding to the defined sub-section delimiter are chapter titles displayed in an order in which they appear in the document.

Alam teaches that heading of input document may be located to generate a linked table of contents page containing the headings, each table of contents heading containing a link to the heading contained in the output document (col 2, lines 37-45). Alam also discloses that the table contents is displayed in the display page (col 19, lines 17-25).

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to integrate the teachings of Alam to the teachings of Okamoto as modified by Palmer in order to easily show the hierarchy of the documents as well as facilitating the selection and view of a particular page of the document, which provides faster access to the particular part of interest in the document.

Response to Arguments

8.   Applicant's arguments filed February 03, 2005 have been fully considered but they are not persuasive.

With respect to claims 1, 2, 4-13, 15-18 and 20-30, the Applicant submits that the Office Action does not assert that either reference taken alone or combination discloses determining a subsection delimiter definition including at least one delimiter characteristics, searching the document to find occurrences of items corresponding to a defined subsection delimiter and generating the index for the document with found items

corresponding to the subsection delimiter occurrences. The Examiner respectfully

disagrees.

Specifically, the Applicant submits that "the segmentation codes of Okamoto are

not fairly read as delimiters as disclosed in the present application" and does not teach

determining or selecting a subsection delimiter definition. However, the Examiner

submits that the Applicant does not clearly define the term "delimiter" such that it differs

from the segmentation code of Okamoto. All the Applicant claims is that the "delimiter

definition including at least one delimiter characteristic" and Okamoto teaches a

segmentation code that includes symbols, which meet the delimiter limitation. According

to the Merriam-Webster dictionary, a "delimiter" is defined to be as "a character that

marks the beginning or end of a unit of data" and such definition meets such symbols and

characters as "...", ";", "," or ":".

Applicant also submits that "it is respectfully submitted that the segmentation

codes and rule-based knowledge are predetermined and are applied to every document

presented to the respective systems; where as according to the methods of the present

application, the subsection delimiter definition can be determined on a document-by-

document basis." The Examiner points out that the claims do not clearly recite that the

subsection delimiter definition is determined on a document-by-document basis and

therefore, the Examiner is not bounded by such interpretation during examination.

Okamoto clearly states that a line return code and a space code or segmentation symbol

are determined as segmentation codes. Therefore, according to the presently claimed

invention, the Examiner believes that Okamoto in view of Palmer still meet the claimed

invention.

In response to Applicant's arguments with respect to Palmer does not disclose or

suggest searching a document to find occurrences of items corresponding to a defined

subsection delimiter and generating the index for the document with found items.

However, the Examiner submits that the claims are rejected based on Okamoto as

modified by Palmer, and not taking Okamoto nor Palmer on an individual basis. The

Examiner believes that Okamoto teaches searching a document to find occurrences of

items corresponding to a defined subsection delimiter. Okamoto as modified by Palmer

teaches generating the index for the document with found items.

Applicant further argues that there is no motivation in the art to combine the

subject matter of Okamoto with the subject matter of Palmer. The Examiner submits that

it is not necessary that the references actually suggest, expressly or in so many words,

changes or possible improvements in order to combine references together and that the

references are shown to indicate that the given invention or recited claims are presented

in the prior art. In re Scheckler, 58 CCPA 936, 438 F. 2d 999, 168 USPQ 716 (1971).

Although it is not necessary that the references actually suggest the changes or

improvement, the examiner understands that there must be some reason why one skilled

in the art would be motivated to make the proposed combination of references. In re

Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a

motivation to make modification be expressly articulated and the combination of

references is what the combination of disclosures taken as a whole would suggest to one

of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). The

Examiner points out that both prior art, Okamoto and Palmer, provide a document

processing system and method that includes dividing the document into plurality of

sections according to a heading or other section defining aspect of the document.

Therefore, such commonality provides the Examiner to combine the two prior art to

provide an enhanced document processing and retrieval system that can quickly organize

the document as well as quickly retrieve a particular document.

Regarding claims 2, 11, 22-27 and 30, the Applicant submits that Okamoto and

Palmer do not disclose or suggest determining a subsection delimiter comprising

indicating at least one of font size, a font style, a text string, a text location description, a

predetermined machine readable symbol, or a specific point coordinate within the

document. However, the Examiner believes that symbols and characters such as "...",

";", "," and ":" are at least a text location description and a specific point coordinate

within the document, and since the document is scanned by a scanner, the symbols are

also machine-readable symbols. The Applicant does not specifically define in the claim a

distinguishing difference between Okamoto's symbols and the Applicants intended

delimiter characters.

Regarding claim 7, the Applicant submits that neither Okamoto nor Palmer

disclose or suggest using at least one recognized property of an exemplary subsection

title as a subsection delimiter definition describing a characteristic to be searched for.

However, the Examiner respectfully disagrees. Claim 7 is not rejected based on an

individual interpretation of the prior art, but rather as a combination. Okamoto teaches

the method for searching a document and Palmer teaches that an OCR method is utilized.

The rejection of claim 7 is based on the combination of Okamoto and Palmer and

therefore, Okamoto as modified by Palmer teaches the claimed limitation. Similarly,

claim 8 is also rejected based on the combination of Okamoto as modified by Palmer,

wherein Okamoto teaches selecting a demarcation point, and Palmer teaches displaying a document. Claims 12 and 13 are also argued in a similar manner to claim 8.

Regarding claim 9 and 15-17, the Applicant submits that neither Okamoto nor Palmer discloses or suggest a delimiter searcher operative to search for and record text and text location regarding the occurrences corresponding to the delimiter definition. However, the Examiner respectfully disagrees. As described above, Okamoto teaches searching for a possible heading sentence, and stores the heading word. The heading sentences are determined by searching the symbols such as "...", ";", "," or ":". Therefore, the Examiner believes that Okamoto as modified by Palmer teaches a delimiter searcher operative to search for and record text and text location regarding the occurrences corresponding to the delimiter definition.

Regarding claims 10, 18 and 28, the Applicant submits that a Palmer does not disclose or suggest a delimiter designation module operative to communicate with the document processor operator through the user interface in order to generate at least one delimiter designation for a delimiter definition to be used by a delimiter searcher. As mentioned above, the claims are not rejected based one reference. The rejection is based on a combination of Okamoto as modified by Palmer. Since Okamoto teaches the delimiter designation system by determining the delimiter and Palmer teaches a user interface, as a combination, Okamoto as modified by Palmer teaches a delimiter designation module operative to communicate with the document processor operator through the user interface in order to generate at least one delimiter designation for a delimiter definition to be used by a delimiter searcher. Claim 18 is argued in a similar manner.

Regarding claims 3 and 14, the Applicant argues the combination of Okamoto,

Palmer and Knowles is based on an impermissible hindsight. However, the Examiner

respectfully disagrees and believes there is motivation to combine the prior art. As

provided above, Okamoto as modified by Palmer teaches a document scanned by a

scanner and the characters and symbols are read through the processor, and therefore, the

delimiters are considered as machine-readable symbols. Although Okamoto as modified

by Palmer does not specifically teach a bar code, one in ordinary skill in the art would

recognize that Okamoto as modified by Palmer teaches machine-readable symbols. Such

machine-readable symbol of Okamoto as modified by Palmer and the bar code (a

machine-readable symbol) teaching of Knowles provides a commonality that provides a

motivation to combine the prior art for a proper rejection. Therefore, the Examiner

believes that the combination is not based on an impermissible hindsight and provides a

proper combination.

Conclusion

9.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of

time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

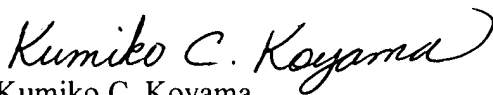extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kumiko C. Koyama whose telephone number is 571-272-2394. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kumiko C. Koyama
Kumiko C. Koyama
May 02, 2005

KARL D. FRECH
PRIMARY EXAMINER